

# SELF-ALIGNED PROCESS USING INDIUM GALLIUM ARSENIDE ETCHING TO FORM REENTRY FEATURE IN HETEROJUNCTION BIPOLAR TRANSISTORS

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## ABSTRACT

A method for forming a heterojunction bipolar transistor (HBT) includes forming an etch mask atop an emitter cap layer of the HBT to expose a portion of the emitter cap layer, and selectively etching the exposed portion of the emitter cap layer to (1) form a reentry feature and (2) to expose a portion of the emitter layer. The method further includes selectively etching the exposed portion of the emitter layer to expose a portion of the base layer, and forming a metal layer over the exposed portion of the base layer and the exposed portion of the emitter cap layer.